

Spiders of the Genus *Coelotes* (Araneae, Agelenidae) from the Mountains of the Tōhoku District, Northeast Japan

By

Yoshiaki NISHIKAWA*

西川喜朗*：東北地方西部山地のヤチグモ類

The spiders of the genus *Coelotes* are primarily ground-living and frequently enter into the endogean domain. For this reason, their ability for dispersal is not pronounced as compared with web spiders and hunting ones. They are subject to geographical differentiation through isolation, and are usually regarded as a group of spiders which are suitable for regional zoogeographic studies.

However, these spiders have not been carefully investigated in the Tōhoku District of Northeast Japan. It is true that five species of *Coelotes* were previously recorded from that district, by SAITO (1939), OKITSU (1951), YAGINUMA (1958, 1981), KATAOKA (1963), INOUE & NAGAKI (1965), MIZUKI (1969), and OHNO & YAGINUMA (1972, 1973), but all these species are common spiders widely distributed in Honshu, Shikoku and Kyushu or at least in the northeastern part of Honshu north of the Kantō District. Besides, they are commonly found near human habitations in the suburbs of large cities. In Niigata Prefecture adjacent to the Tōhoku District, the spider fauna has been better known (cf. UCHIDA, 1976; MIZUSAWA, 1977, 1981), but only six species of *Coelotes* have been included in the list and none of them are localized in that prefecture. This makes a sharp contrast to the spider fauna of Southwest Japan. For instance, eleven species of *Coelotes* occur on the Minoo Hills near Osaka, where total 250 species of spiders have been recorded (NISHIKAWA, 1977 a, b).

Late in the summer of 1982, I was given an opportunity to investigate the spider fauna of the western side of the Tōhoku District as a member of the natural history research project conducted by the National Science Museum, Tokyo. My interest was concentrated on collecting *Coelotes* in mountainous areas, in the hope that certain endemic forms could be found there. I was able to obtain six species of the genus, three of which were new to science. Adding to these, a small collection of *Coelotes* made in the autumn of 1977 was also available for the present study.

As will be shown in the following descriptions, none of the six species are strictly localized; three described ones are widespread species, and even the three new forms have rather wide ranges at the western side of the Tōhoku District. This is interesting from

* Biological Laboratory, Ohtemon-Gakuin University, Osaka
追手門学院大学 生物学研究室

the zoogeographic view-point, since in central Honshu for example, these spiders show considerable geographical differentiation. The phenomenon may have been resulted from the cool climate of the Tōhoku District. As none of the northern species of *Coelotes* are high altitude inhabitants, they are apt to come down to low places and rather easily cross over supposed barriers formed by small plains and rivers.

The holotype and some of the paratypes of the new species to be described in the present paper are preserved in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo. The remaining paratypes are deposited in the collection of the Arachnological Society of East Asia, Ohtemon-Gakuin University, Ibaraki-shi, Osaka.

Before going further, I wish to express my hearty thanks to Dr. Shun-Ichi UÉNO of the National Science Museum, Tokyo, who not only afforded me the opportunity of joining the survey but encouraged my study and kindly read through the original manuscript of this paper. Deep appreciation is also due to Professor Yasuaki WATANABE of Tokyo University of Agriculture and Dr. Kintaro BABA of Kurokawa Hospital, Niigata, for their kind aid rendered in the field of Yamagata and Niigata Prefectures, and to Messrs. Tohru UMEHARA, Kōjirō KATSURA, Osamu TOMINAGA and Masaki MICHIMORI for their kind help extended to me in the autumn of 1977. I am also deeply indebted to Professor Takeo YAGINUMA of Ohtemon-Gakuin University for his constant guidance and encouragement.

Coelotes exitialis L. KOCH, 1878

[Japanese name: Kuro-yachigumo]

Caelotes [sic] *exitialis* L. KOCH, 1878, Verh. zool.-bot. Ges. Wien, 27, p. 755, pl. 15, fig. 19. — UYEMURA, 1936, Acta arachnol., 1, pp. 10–12, with 2 figs. — SAITO, 1941, Fauna Nipponica, Tokyo, 9 (2–2), pp. 41–42, fig. 53–c. — YAGINUMA, 1960, Spiders of Japan in Colour, Osaka, p. 93, fig. 82–2.

Coelotes exitialis: YAGINUMA, 1968, Spiders of Japan in Colour, Osaka, (rev. ed.), p. 93, fig. 82–2; 1970, Bull. Natn. Sci. Mus., Tokyo, 13, p. 664. — NISHIKAWA, 1977, Fac. Let. Rev. Otemon Gakuin Univ., (8), pp. 175–176, figs. 1–2.

Specimens examined. 1♀, north of Mt. Chōkai-zan, 840 m alt., Yajima-chō, Yuri-gun, Akita Pref., L.C. [C4004–3909],¹⁾ 28–VIII–1982, Y. NISHIKAWA leg.; 2♀, west-southwest of Mt. Sanbōgura-yama, 540 m alt., Atsumi-chō, Nishitagawa-gun, Yamagata Pref., L.C. [C3944–3834], 1–IX–1982, Y. NISHIKAWA leg.; 1♀, southwest of Mt. Maya-san, 450 m alt., Atsumi-chō, Nishitagawa-gun, Yamagata Pref., L.C. [C3942–3830], 1–IX–1982, Y. NISHIKAWA leg.; 3♀, 1♂, west of Mt. Atsumi-dake, 240 m alt., Atsumi-chō, Nishitagawa-gun, Yamagata Pref., L.C. [C3937–3836~3837], 2–IX–1982, Y. NISHIKAWA, S. UÉNO & Y. WATANABE leg.

Notes. Widely distributed in Honshu, Shikoku and Kyushu (cf. NISHIKAWA, 1976), this species shows a considerable geographical variation and can be discriminated into many local races or even into sibling species (NISHIKAWA, 1975). As regards the populations found in the Tōhoku District, no distinctive difference can be recognized between themselves and between these and the populations of the adjacent areas. Since KOCH's original

1) MATSUMOTO's locality code (MATSUMOTO, 1979).

description was based upon a female which is less important taxonomically, I prefer to regard the Tōhoku populations as *C. exitialis* at least for the time being.

***Coelotes hamamurai* YAGINUMA, 1967**

[Japanese name: Futaba-yachigumo]

Coelotes hamamurai YAGINUMA, 1967, Lit. Dept. Rev. Otemon Gakuin Univ., (1), pp. 99–100, 106, figs. 3–(u–w). — NISHIKAWA, 1977, Fac. Let. Rev. Otemon Gakuin Univ., (8), p. 177, figs. 23–24.

Specimens examined. 1♀, south-southwest of Mt. Taihei-zan, 410 m alt., Akita-shi, Akita Pref., L.C. [C4018–3946], 25–VIII–1982, Y. NISHIKAWA leg.; 1♂, west-southwest of Shibakura-tōge Pass, 370 m alt., Tazawako-chō, Senboku-gun, Akita Pref., L.C. [C4039–3940], 26–VIII–1982, Y. NISHIKAWA leg.

Notes. Though widely distributed in eastern Honshu, from Iwate and Akita Prefectures in the north to Shizuoka Prefecture in the south (cf. NISHIKAWA, 1976), this spider was collected only at the two localities given above during the 1982 survey. Both of them are less than 410 m in altitude, and the spider did not appear to occur at higher places.

***Coelotes kitazawai* YAGINUMA, 1972**

[Japanese name: Azuma-yachigumo]

Coelotes kitazawai YAGINUMA, 1972, Bull. Natn. Sci. Mus., Tokyo, 15, pp. 318–320, figs. 41–42. — NISHIKAWA, 1977, Fac. Let. Rev. Otemon Gakuin Univ., (8), p. 176, figs. 8–9.

Specimens examined. 1♀, west of Ōhira-yama, northeast of Mt. Kaifuki-dake, 490 m alt., Shizukuishi-chō, Iwate-gun, Iwate Pref., L.C. [C4050–4043], 27–VIII–1982, Y. NISHIKAWA leg.; 1♀, 2♂, western slope of Otomo-tōge Pass, 370 m alt., Honjō-shi, Akita Pref., L.C. [C4009–3922], 28–VIII–1982, Y. NISHIKAWA leg.

Notes. Like the preceding, this species was obtained only at the two localities given above during the 1982 survey, although it is widely distributed in eastern Honshu, from Aomori Prefecture in the north to Nagano and Shizuoka Prefectures in the south (cf. NISHIKAWA, 1976). Both the localities are on low hills less than 490 m in altitude.

Though resembling *C. antri* (KOMATSU), this species can be readily recognized on the peculiarities of its genital organ. It is commonly found wandering about on forest floors in the autumn.

***Coelotes erraticus* NISHIKAWA, sp. nov.**

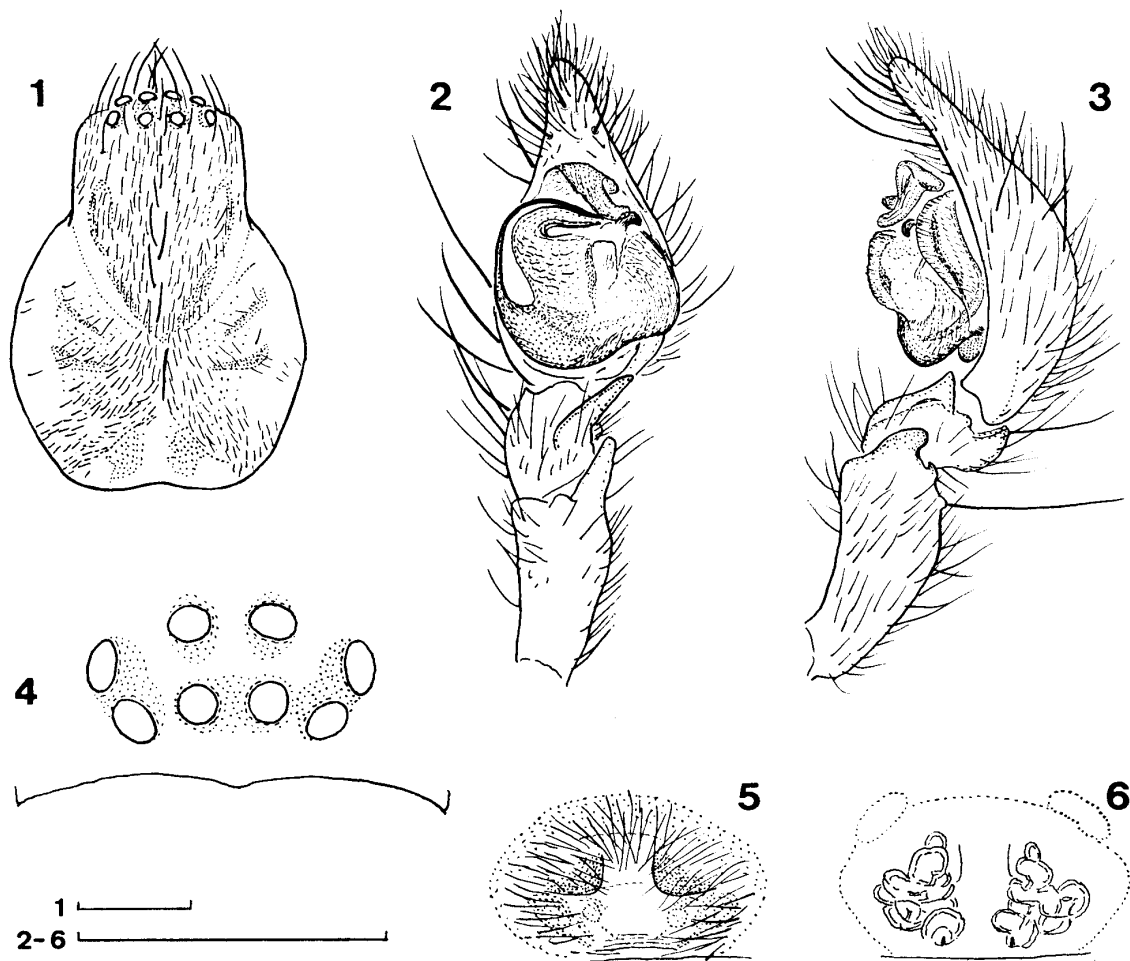
[Japanese name: Akita-yachigumo]

(Figs. 1–6)

Male (Holotype). Total length 7.5 mm; cephalothorax 3.5 mm long, 2.5 mm wide; abdomen 4.0 mm long, 1.2 mm wide. Ratio of the width of head to that of thorax 10:17; ratio of the width of eye area to that of head 12:19. Anterior eye row and posterior eye row procurved seen from front (Fig. 4). Anterior median eyes (AME) about 0.8 times their

diameter apart, about the radius from the anterior lateral eyes (ALE). AME the smallest, posterior lateral eyes (PLE) and anterior lateral eyes (ALE) the smallest. Order of eyes in diameter, $AME < PME < ALE = PLE$ (17:19:23:23). Median ocular area (MOA) slightly longer than wide (25:24), narrower in front than behind (7:8). Clypeus shorter than twice the diameter of AME. A few rows of hairs along the anterior and middle radial furrows (Fig. 1), and many hairs along the posterior radial furrows. Chelicera geniculate, with stout lateral condyle. Promargin of fang furrow with three teeth, retromargin also with three. Labium slightly longer than wide, extending beyond the mid-point of maxillae. Sternum longer than wide (20:17), 1.73 mm long, 1.48 mm wide. Leg formula 1, 4, 2, 3. Measurements (in mm) as follows:

Leg	Fem.	Pat. & Tib.	Metatar.	Tar.	Total
I	3.40	4.50	3.47	1.95	13.32
II	3.20	3.93	3.09	1.75	11.97
III	2.87	3.40	2.74	1.46	10.47
IV	3.40	4.30	3.67	1.70	13.07



Figs. 1-6. *Coelotes erraticus* NISHIKAWA, sp. nov. — 1. Dorsal aspect of male cephalothorax. 2. Male palp, ventral view. 3. Male palp, ectal view. 4. Eye area from front (male). 5. Epigynum. 6. Female genitalia. (Scale: 1 mm)

Ventral spines on legs: each tibia and metatarsus, 2-2-2. Posterior spinnerets long, with the apical segment as long as the basal one. Palp as shown in Figs. 2-3.

Colour. Cephalothorax light brown, yellowish in thorax, median furrow reddish brown. Chelicera reddish brown; maxilla and labium brown. Sternum brown, with lighter middle part. Legs light brown, with three light flecks on the venter of each femur, and with two indistinct light ring flecks on each tibia. Dorsum of abdomen light yellowish brown with a gray broad stripe at the anterior part, and followed by dark gray pattern with five light yellowish brown paired flecks. Venter of abdomen light yellowish brown without pattern, but with a pair of small flecks at the sides of spinnerets.

Female (Paratype-1). Similar in coloration and structure to male. Total length 8.9 mm; cephalothorax 4.2 mm long, 2.9 mm wide; abdomen 4.7 mm long, 3.4 mm wide. Ratio of the width of head to that of thorax 2:3; width of eye area to that of thorax 22:39. Leg formula 4, 1, 2, 3. Measurements (in mm) of legs as follows:

Leg	Fem.	Pat. & Tib.	Metatar.	Tar.	Total
I	3.31	4.18	2.76	1.72	11.97
II	3.15	3.76	2.75	1.53	11.19
III	2.91	3.25	2.55	1.35	10.06
IV	3.52	4.08	3.00	1.73	12.33

Epigynum with two round triangular projections attached to the anterior lateral edges (Fig. 5).

Type-series. Holotype: ♂, paratype-1: ♀, northern slope of Mt. Koma-ga-take, 1,320-1,440 m alt., Tazawako-chō, Senboku-gun, Akita Pref., L.C. [C4048-4045], 27-VIII-1982, Y. NISHIKAWA leg. Paratypes: 1♂, locality and date the same as the holotype; 1♀, northern slope of Mt. Koma-ga-take, 1,110 m alt., Tazawako-chō, Senboku-gun, Akita Pref., L.C. [C4048-4046], 27-VIII-1982, Y. NISHIKAWA leg.; 2♂, south of Mt. Hon-zan, 630 m alt., Oga-hantō Peninsula, Oga-shi, Akita Pref., L.C. [C3945-3953], 23-VIII-1982, Y. NISHIKAWA leg.; 2♂, east of Mt. Shin-zan, 200-300 m alt., Oga-hantō Peninsula, Oga-shi, Akita Pref., L.C. [C3945-3954], 24-VIII-1982, Y. NISHIKAWA leg.; 1♀, southwest of Ôtaki Fall on Kawakita-rindō, Kawabe-chō, Kawabe-gun, Akita Pref., L.C. [C4025-3947], 26-VIII-1982, Y. NISHIKAWA leg.; 1♀, Heiji-zawa, 500 m alt., Ani-chō, Kita-akita-gun, Akita Pref., L.C. [C4032-3952], 26-VIII-1982, Y. NISHIKAWA leg.; 1♀, west-southwest of Shibakura-tōge Pass, south of Lake Tazawa-ko, Tazawako-chō, Senboku-gun, Akita Pref., L.C. [C4039-3940], 26-VIII-1982, Y. NISHIKAWA leg.; 1♂, northern slope of Mt. Chōkai-zan, 840 m alt., L.C. [C4004-3909], 1♀, 1♂, northern slope of Mt. Chōkai-zan, 1,050 m alt., L.C. [C4004-3908], 1♀, 1♂, northern slope of Mt. Chōkai-zan, 1,250 m alt., L.C. [C4004-3907], all in Yajima-chō, Yuri-gun, Akita Pref., 28-VIII-1982, Y. NISHIKAWA leg.

Other specimens examined. 2♀, 2♂, 1♀y, southwest of Mt. Iwaki-san, 320-330 m alt., Iwaki-chō, Nakatsugaru-gun, Aomori Pref., L.C. [C4020-4037], 24-IX-1977, O. TOMINAGA & K. KATSURA leg.; 2♂, west-southwest of Mt. Iwaki-san, 580 m alt., Iwaki-chō, Nakatsugaru-gun, Aomori Pref., L.C. [C4015-4038], 25-IX-1977, K. KATSURA, M. MICHIMORI & T. UMEHARA leg.; 1♂, western slope of Mt. Iwaki-san, 1,240 m alt., Iwaki-chō, Nakatsugaru-gun, Aomori Pref., L.C. [C4017-4039], 25-IX-1977, K. KATSURA, M. MICHIMORI

& T. UMEHARA leg.; 1♀, 1♂, west-southwest of Mt. Sanbôgura-yama, 540 m alt., Atsumi-chô, Nishitagawa-gun, Yamagata Pref., L.C. [C3944-3834], 1-IX-1982, Y. NISHIKAWA leg.; 1♂, southwest of Mt. Maya-san, 430 m alt., Atsumi-chô, Nishitagawa-gun, Yamagata Pref., L.C. [C3942-3830], 1-IX-1982, Y. NISHIKAWA leg.

Notes. The present species resembles *C. corasides* (BÖSENBERG et STRAND, 1906) in appearance, but is easily distinguished from the latter by the different structure of male palp. The embolic conductor and terminal apophysis are short and overlapping in this species, while they are long and a little distant in the latter. These two species closely resemble each other in the shape of the epigyna, but the former bears lesser number of hairs on the thorax than the latter.

The following specimens of the type-series were reared from subadults: one male from Mt. Hon-zan, two males from Kawakita-rindô, one female from Heiji-zawa, and one female from the Shibakura-tôge. It took four to thirteen days for rearing after they had been taken in the field.

In the specimens from Mt. Sanbôgura-yama and Mt. Maya-san, both at the southwestern end of the known distributional range of the new species, the embolic conductor of male palp is relatively slender and a little more strongly arcuate. However, this does not appear to have any value of specific or subspecific importance.

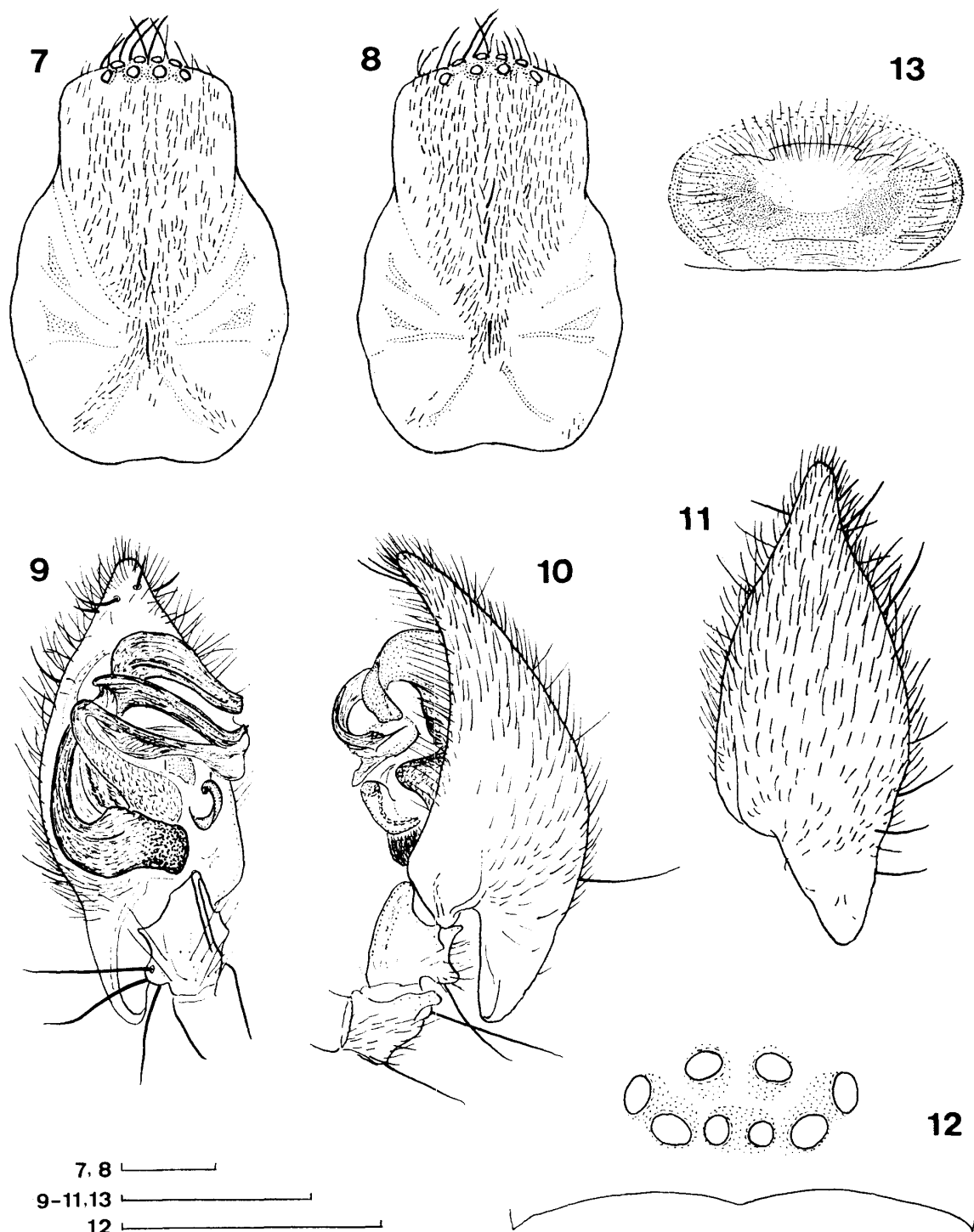
Coelotes kintaroi NISHIKAWA, sp. nov.

[Japanese name: Masakari-yachigumo]

(Figs. 7-13)

Male (Holotype). Total length 8.4 mm; cephalothorax 4.3 mm long, 2.85 mm wide; abdomen 4.1 mm long, 2.4 mm wide. Ratio of the width of head to that of thorax 12:19; ratio of the width of eye area to that of head 16:31. Anterior eye row almost straight (Fig. 12), posterior eye row procurved seen from front. Anterior median eyes (AME) about 0.7 times their diameter apart, about the radius from the anterior lateral eyes (ALE). AME the smallest, posterior lateral eyes (PLE) the largest. Order of eyes in diameter, AME < PME < ALE = PLE (12:17:20:21). Median ocular area (MOA) wider than long (12:11), narrower in front than behind (11:16). Clypeus longer than twice the diameter of AME. A few rows of hairs along the posterior radial furrows (Fig. 7) (nearly absent in female (Fig. 8)). Median furrow with about fifteen hairs on each side. Chelicera geniculate, with stout lateral condyle. Promargin of fang furrow with three teeth, retromargin with two. Labium slightly longer than wide, reaching the mid-point of maxillae. Sternum longer than wide (23:18), 2.08 mm long, 1.63 mm wide. Leg formula 4, 1, 2, 3. Measurements (in mm) of right legs as follows:

Leg	Fem.	Pat. & Tib.	Metatar.	Tar.	Total
I	3.00	3.87	2.63	1.62	11.12
II	2.95	3.45	2.50	1.55	10.45
III	2.70	2.80	2.60	1.46	9.56
IV	3.40	4.13	3.76	1.82	13.11



Figs. 7-12. *Coelotes kintaroi* NISHIKAWA, sp. nov. — 7. Dorsal aspect of male cephalothorax. 8. Dorsal aspect of female cephalothorax. 9. Male palp, ventral view. 10. Male palp, ectal view. 11. Male palpal tarsus, dorsal view. 12. Eye area from front (male). 13. Epigynum. (Scale: 1 mm)

Ventral spines on legs: tibia I, 2-2-2; tibia II, 1-1-2; tibia III, 2-1-2; tibia IV, 2-2-2; metatarsi I, II and III, 2-2-2 (each of tibia, 2-2-2 in the paratype-1 and many paratypes). Posterior spinnerets long, with the apical segment longer than the basal one. Dorso-proximal part of palpal tarsus with a protuberance extending proximally (Figs. 9-11).

C o l o u r. Cephalothorax light brown, lighter in thorax, median furrow dark reddish brown, radial furrow dark brown. Chelicera reddish brown; maxillae and labium brown. Sternum light brown. Legs light brown without any ring flecks. Abdomen grayish brown with indistinct yellowish brown chevrons. Dorsum of abdomen grayish brown with several light brown paired flecks. Venter of abdomen yellowish brown, without any flecks.

Female (Paratype-1). Similar in coloration and structure to male. Total length 8.8 mm; cephalothorax 4.15 mm long, 2.75 mm wide; abdomen 4.6 mm long, 3.4 mm wide. Ratio of the width of head to that of thorax 12:16; width of eye area to that of head 15:28. Leg formula 4, 1, 2, 3. Measurements (in mm) of legs as follows:

Leg	Fem.	Pat. & Tib.	Metatar.	Tar.	Total
I	2.74	3.30	2.01	1.30	9.35
II	2.50	2.95	1.95	1.25	8.65
III	2.34	2.70	1.62	1.15	7.81
IV	2.99	3.61	3.10	1.40	11.10

Epigynum large and wider than long, as shown in Fig. 13.

Type-series. Holotype: ♂, northern slope of Mt. Narumi-yama, 640 m alt., Asahimura, Iwafune-gun, Niigata Pref., L.C. [C3941-3821], 3-IX-1982, Y. NISHIKAWA leg. Paratype-1: ♀, west-southwest of Mt. Sanbôgura-yama, 540 m alt., Atsumi-chô, Nishitagawa-gun, Yamagata Pref., L.C. [C3944-3834], 1-IX-1982, Y. NISHIKAWA leg. Paratypes: 1♀, 3♂, locality and date the same as the holotype, Y. NISHIKAWA & S. UÉNO leg.; 3♀, 2♂, locality and date the same as paratype-1, Y. NISHIKAWA, S. UÉNO & Y. WATANABE leg.; 1♀, 1♂, western side of Mt. Atsumi-dake, 240 m alt., Kowashimizu, Atsumi-chô, Nishitagawa-gun, Yamagata Pref., L.C. [C3937-3836~3837], 2-IX-1982, Y. NISHIKAWA, S. UÉNO & Y. WATANABE leg.; 1♂, west-southwestern slope of Mt. Narumi-yama, 700 m alt., Asahimura, Iwafune-gun, Niigata Pref., L.C. [C3941-3822], 3-IX-1982, Y. NISHIKAWA leg.

Other specimens examined. 1♀, 1♂, west-northwest of Mt. Zaô-zan, 1,150-1,200 m alt., north of Juhyôkôgen-eki ropeway station, Yamagata-shi, Yamagata Pref., L.C. [C4024-3808], 6, 7-X-1977, Y. NISHIKAWA leg.; 3♀, east of Mt. Shin-zan, 200-350 m alt., Oga-hantô Peninsula, Oga-shi, Akita Pref., L.C. [C3946-3954]~[C3945-3954], 24-VIII-1982, Y. NISHIKAWA leg.

Notes. This new species is peculiar in having a large protuberance at the dorso-proximal part of male palpal tarsus; in all the other known species of Japanese *Coelotes*, this part of the organ is simple. It resembles *C. hamamurai* YAGINUMA, 1967, in general appearance, but can be readily distinguished from it by the above peculiarity as well as by the shape of epigynum. The latter organ has two projections at the anterior part and a large brown pattern along the posterior part in the present species, but in *C. hamamurai*, the projections are situated in the middle of epigynum and the posterior part is white and lacking in a brown

pattern. The peculiar palpal tarsus in the male is known in the genus *Wadotes* of North America, but in the latter genus, the epigynum bears only a single projection in the middle, instead of a pair.

The specimens from the Oga-hantō Peninsula are somewhat different from the type-series in that the mutual distance of the two projections on epigynum is relatively small. As no males are known from this locality, which is isolated from the known distributional range of the species, it is difficult at present to decide if the difference is subspecific or not.

The following specimens of the type-series were reared from subadults: one male and one female from Mt. Narumi-yama and one male from Mt. Atsumi-dake. It took two to five days for rearing after they had been taken in the field.

This new species was first recognized by Professor Takeo YAGINUMA on the basis of the specimens collected by Dr. Kintaro BABA. As ample material was obtained by the 1982 survey from various localities, Professor YAGINUMA allowed me to describe it in the present paper. The specific name is dedicated to Dr. Kintaro BABA, who first discovered this spider and rendered invaluable aid to our field works.

Coelotes obako NISHIKAWA, sp. nov.

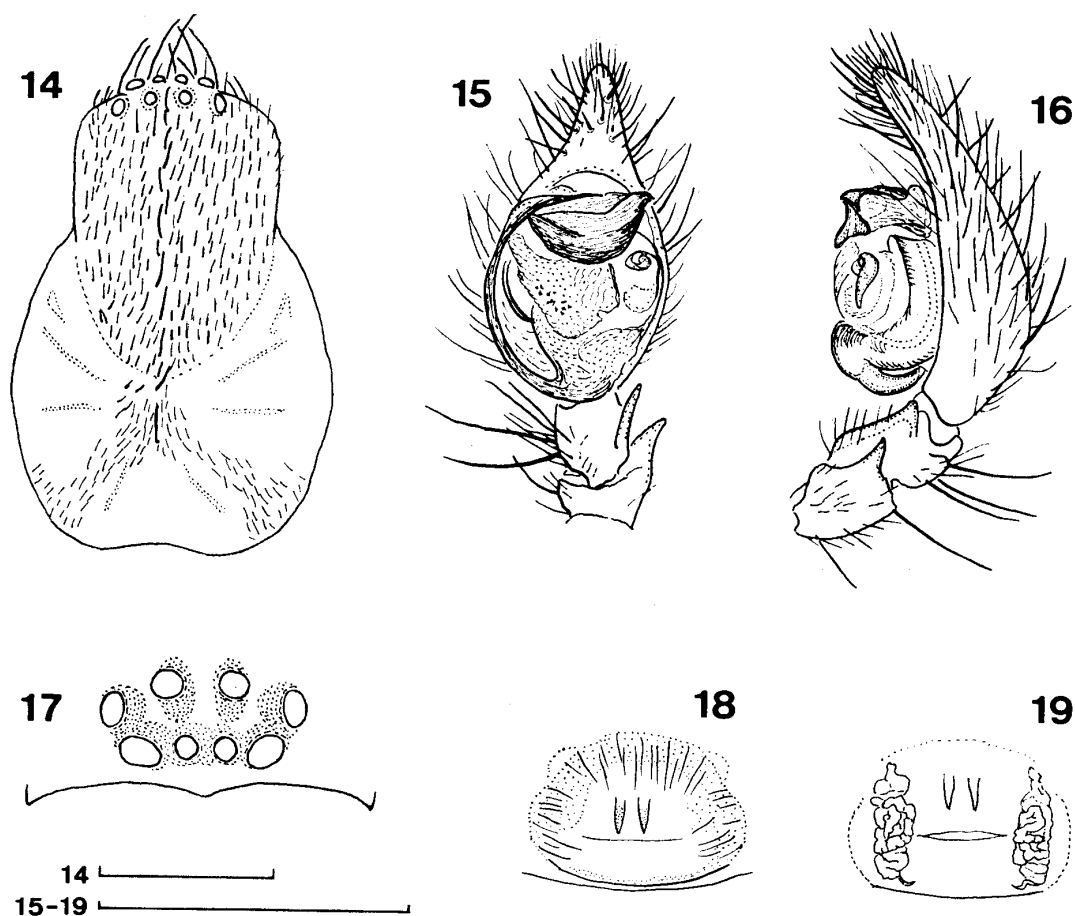
[Japanese name: Obako-yachigumo]

(Figs. 14–19)

Male (Holotype). Total length 5.2 mm; cephalothorax 2.6 mm long, 1.9 mm wide; abdomen 2.6 mm long, 1.75 mm wide. Ratio of the width of head to that of thorax 12:19; ratio of the width of eye area to that of head 7:12. Anterior eye row weakly procurved (Fig. 17), posterior eye row procurved seen from front. Anterior median eyes (AME) about 0.6 times their diameter apart, about the radius from the anterior lateral eyes (ALE). AME the smallest, posterior lateral eyes (PLE) and ALE the largest. Order of eyes in diameter, AME < PME < ALE = PLE (10:15:16:16). Median ocular area (MOA) slightly wider than long (19:18), narrower in front than behind (12:19). Clypeus 1.4 times the diameter of AME. A few rows of hairs along the posterior radial furrows (Fig. 14). Median furrow with about fifteen hairs on each side. Chelicera geniculate, with stout lateral condyle. Pro-margin of fang furrow with three teeth, retromargin also with three teeth. Labium very slightly longer than wide, almost reaching the mid-point of maxillae. Sternum longer than wide (15:13), 1.47 mm long, 1.27 mm wide. Leg formula 4, 1, 2, 3. Measurements (in mm) as follows:

Leg	Fem.	Pat. & Tib.	Metatar.	Tar.	Total
I	2.03	2.52	1.72	1.12	7.39
II	2.00	2.24	1.61	0.88	6.73
III	1.89	2.03	1.79	0.95	6.66
IV	2.28	2.80	2.56	1.12	8.76

Ventral spines on legs: tibiae I, III and IV, 2–2–2; tibia II, 1–2–2; each metatarsus,



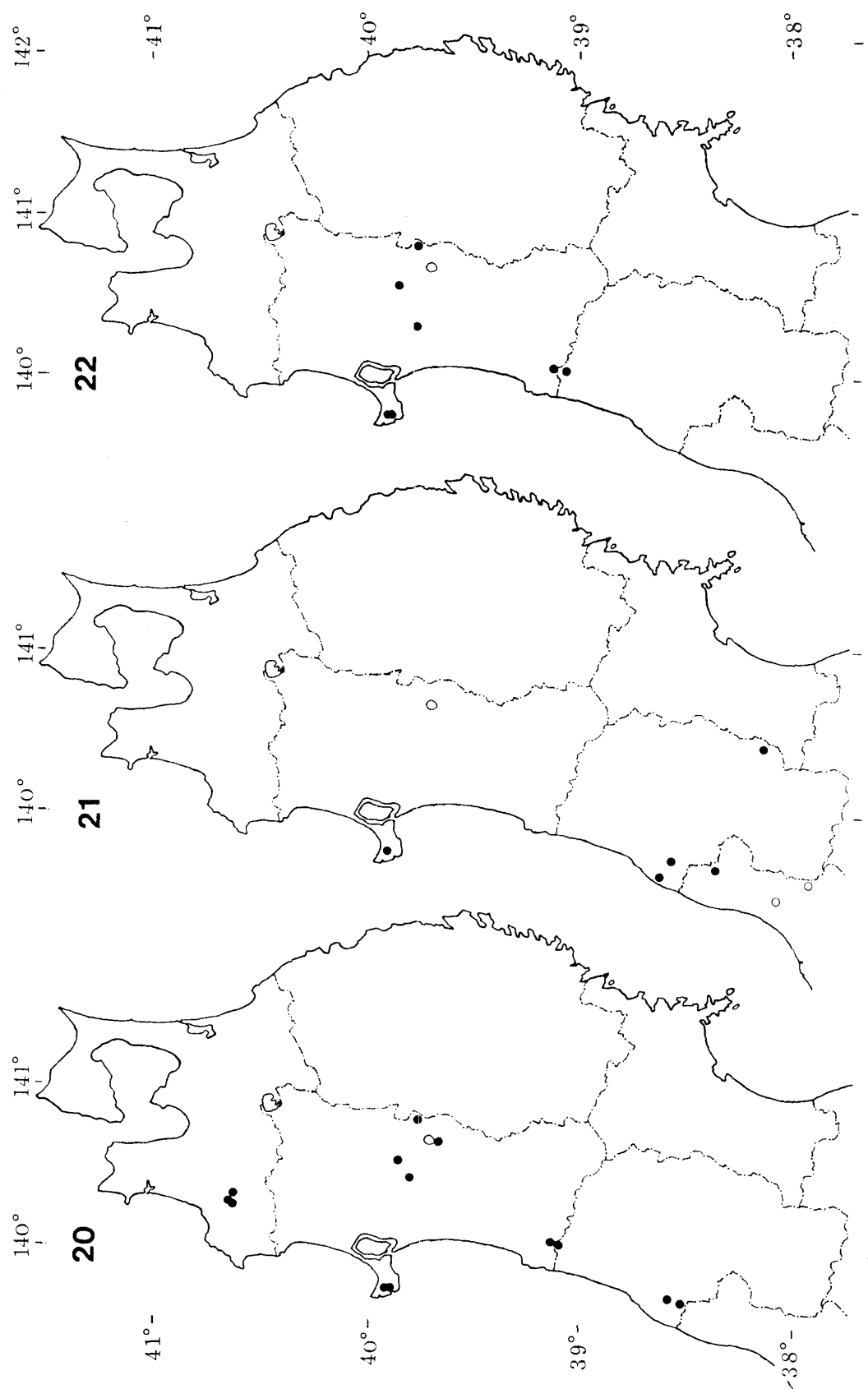
Figs. 14-19. *Coelotes obako* NISHIKAWA, sp. nov. — 14. Dorsal aspect of male cephalothorax. 15. Male palp, ventral view. 16. Male palp, ectal view. 17. Eye area from front (male). 18. Epigynum. 19. Female genitalia. (Scale: 1 mm)

2-2-2. Posterior spinnerets long, with the apical segment as long as the basal. Embolic conductor crescent-shaped. Palp as shown in Figs. 15-16.

Colour. Cephalothorax light brown, lighter in thorax, median furrow dark reddish brown, radial furrow brown. Chelicera reddish brown; maxillae and labium brown. Sternum light brown. Legs light brown, with two indistinct light flecks on each femur and tibia. Dorsum of abdomen brownish gray with four light yellowish gray paired flecks. Venter of abdomen light yellowish gray with several flecks around the spinnerets.

Female (Paratype-1). Similar in coloration and structure to male. Total length 6.0 mm; cephalothorax 2.9 mm long, 1.9 mm wide; abdomen 3.1 mm long, 2.0 mm wide. Ratio of the width of head to that of thorax 13:19; the width of eye area to that of head 15:26. Leg formula 4, 1, 2, 3. Measurements (in mm) of legs as follows:

Leg	Fem.	Pat. & Tib.	Metatar.	Tar.	Total
I	1.79	2.10	1.40	0.91	6.20
II	1.68	1.84	1.31	0.79	5.62
III	1.44	1.59	1.37	0.70	5.10
IV	1.82	2.24	2.45	0.98	7.49



Figs. 20-22. Distribution of *Coelotes* spp. in the Tōhoku District, Northeast Japan. Black circles: localities confirmed by specimens. White circles: localities given in literature (YAGINUMA, 1981). — 20. *Coelotes erraticus* sp. nov. — 21. *Coelotes kintaroi* sp. nov. — 22. *Coelotes obako* sp. nov.

Epigynum with a pair of slender projections (Fig. 18).

Type-series. Holotype: ♂, paratype-1: ♀, southern slope of Mt. Chôkai-zan, 1,220–1,300 m alt., Yawata-chô, Akumi-gun, Yamagata Pref., L.C. [C4002–3904], 29–VIII–1982, Y. NISHIKAWA leg. Paratypes: 1♀, locality and date the same as the holotype; 1♀, northern slope of Mt. Chôkai-zan, 1,250 m alt., Yajima-chô, Yuri-gun, Akita Pref., L.C. [C4004–3907], 28–VIII–1982, Y. NISHIKAWA leg.

Other specimens examined. 2♀, 2♂, south of Mt. Hon-zan, 630 m alt., Oga-hantô Peninsula, Oga-shi, Akita Pref., L.C. [C3945–3953], 23–VIII–1982, Y. NISHIKAWA leg.; 1♀, east of Mt. Shin-zan, 200–300 m alt., Oga-hantô Peninsula, Oga-shi, Akita Pref., L.C. [C3946–3954], 24–VIII–1982, Y. NISHIKAWA leg.; 3♀, southwestern slope of Mt. Taihei-zan, 660 m and 830–850 m alt., Akita-shi, Akita Pref., L.C. [C4018–3946], 25–VIII–1982, Y. NISHIKAWA leg.; 1♀, Heiji-zawa, 500 m alt., Ani-chô, Kita-akita-gun, Akita Pref., L.C. [C4032–3952], 26–VIII–1982, Y. NISHIKAWA leg.; 2♂, 2♀y, north of Mt. Koma-ga-take, 1,320–1,440 m alt., Tazawako-chô, Senboku-gun, Akita Pref., L.C. [C4048–4045], 27–VIII–1982, Y. NISHIKAWA leg.

Notes. The present species resembles *C. yodoensis* NISHIKAWA, 1977, but is easily distinguished from the latter by the larger embolic conductor and the shape of the two projections of epigynum, the latter of which are sharp-pointed and parallel to each other.

The following specimens of the type-series were reared from subadults: one male from Mt. Chôkai-zan, two males and two females from Mt. Hon-zan, one female from Mt. Shin-zan, one female from Mt. Taihei-zan, one female from Heiji-zawa, and one male from Mt. Koma-ga-take. It took one to seven days for rearing after they had been taken in the field.

The specific name “obako” is a dialect in Akita and Yamagata Prefectures meaning young girls.

要 約

1982年8月23日から9月3日にかけて、東北地方の主として秋田県、山形県そして新潟県北部のヤチグモ類 (*Coelotes* 属) について調査した。ヤチグモ類は地表性または地中性のクモで、ほとんどの種の成熟期は秋から春であるが、今回の調査の時期は、成体の出現期としては少し早すぎたように思われた。したがって、亜成体の個体が多く採集されたが、採集後に飼育を続けることにより、そのうち約半数の個体がガラス管中で脱皮して成体となった。

今回の調査の結果、これらの東北地方の山地に分布するヤチグモ類は6種が確認され、ファウナの空白地帯をかなりうめることができた。うち3種は新種で、本文に記載した。6種の種名と産地は次のとおりである。

- 1) クロヤチグモ *C. exitialis* L. KOCH, 1878 —— 鳥海山 (秋田県矢島町), 三方倉山, 摩耶山, 温海岳 (以上山形県温海町)。既知産地は本州, 四国, 九州
- 2) フタバヤチグモ *C. hamamurai* YAGINUMA, 1967 —— 太平山 (秋田市), 柴倉峠 (秋田県田沢湖町)。既知産地は本州 (東北, 関東, 中部地方)
- 3) アズマヤチグモ *C. kitazawai* YAGINUMA, 1972 —— 大平山 (岩手県雫石町), 小友峠 (秋田県本庄市)。既知産地は本州 (東北, 関東, 中部地方)
- 4) アキタヤチグモ *C. erraticus* NISHIKAWA, 1983 (新種) —— 岩木山 (青森県岩木町), 本山, 真山

(以上秋田県男鹿市), 河北林道の大滝 (同河辺町), 兵治沢 (同阿仁町), 柴倉峠 (同田沢湖町), 駒ヶ岳 (同田沢湖町), 鳥海山 (同矢島町), 三方倉山, 摩耶山 (以上山形県温海町)

- 5) マサカリヤチグモ *C. kintaroi* NISHIKAWA, 1983 (新種) —— 真山 (秋田県男鹿市), 三方倉山, 温海岳 (以上山形県温海町), 鳴海山 (新潟県朝日村), 蔵王山 (山形市). 既知産地は新潟県北部 (黒川村, 大石山) (八木沼, 1981)

- 6) オバコヤチグモ *C. obako* NISHIKAWA, 1983 (新種) —— 本山, 真山 (以上秋田県男鹿市), 太平山 (秋田市), 兵治沢 (同阿仁町), 駒ヶ岳 (同田沢湖町), 鳥海山 (秋田県矢島町および山形県八幡町)

なお, 山地での調査に主眼をおいたので, 北海道から九州まで広く分布し, 都市近郊や神社や人家の周辺などからよく採集され, 当然分布しているだろうと考えられるヤマヤチグモ *C. corasides*, シモフリヤチグモ *C. insidiosus*, ヒメシモフリヤチグモ *C. interunus*, メガネヤチグモ *C. luctuosus* などは, 残念ながら採集できなかった.

調査地域の気候帯は, 水平的にはかなりよく似ていて単純であるが, 垂直的には温帯から高山帯にわたり, かついくつかの山塊が含まれているので, それらの山塊ごとに特産種が見られるかも知れないと考えられた. しかし, 調査の結果は当初の予想がはずれ, 3 種の新種においても, その分布域は多少異ってはいるものの, 東北地方のうちである広がりをもって分布しており, 中部地方などで見られるような, 特定の山塊の固有種は認められなかった. また, 既知の 3 種も全国または東日本に広く分布する種であった.

以上のことから, ヤチグモ類に関するかぎり, 東北地方における山塊や平野などが, 種分化に大きな影響をおよぼすほど地理的隔離の要因にはなっていないものと考えられる.

References

- INOUE, H., & Z. NAGAKI, 1965. Spiders found in Akita Pref. *Atypus*, (36): 17–22. (In Japanese.)
- KATAOKA, S., 1963. On the spider from Iwate Pre. [sic]. *Ann. Rept. Iwate-ken Kagaku Kenkyu Happyokai for the Fiscal Year of 1963*, 1–16, pls. 2. (In Japanese.)
- MATSUMOTO, S., 1979. Locality code as a method indicating the geographical point in the eight-figured number. *Bull. biogeogr. Soc. Japan*, 34: 21–27. (In Japanese, with English summary.)
- MIZUKI, R., 1969. Spiders from Aomori Prefecture. *Atypus*, (49/50): 47–51. (In Japanese.)
- MIZUSAWA, M., 1977. Spiders of Niigata Prefecture. *Niigata-no-shizen*, (3): 255–262. (In Japanese.)
- MIZUSAWA, M., 1981. List of spiders of Niigata Prefecture. *Heteropoda*, (4): 8–31. (In Japanese.)
- NISHIKAWA, Y., 1974. Japanese spiders of the genus *Coelotes* (Araneae: Agelenidae). *Fac. Let. Rev. Otemon Gakuin Univ.*, (8): 174–182. (In Japanese.)
- NISHIKAWA, Y., 1975. Preliminary notes on the geographical distribution and variation of *Coelotes exitialis* (Araneae: Agelenidae). *Ibid.*, (9): 173–185. (In Japanese.)
- NISHIKAWA, Y., 1976. A preliminary note on the geographical distribution of the genus *Coelotes* in Japan (Araneae: Agelenidae). *Ess. Stud. Publ. Comm. 10th Anniv. Otemon Gakuin Univ.*, pp. 1043–1066. (In Japanese.)
- NISHIKAWA, Y., 1977 a. Spiders from Mino-o City, Osaka Prefecture. *Studies for Nature Conservation and Restoration in Mino-o Dam area*, pp. 359–391. Osaka, Osaka Prefectural Office. (In Japanese.)
- NISHIKAWA, Y., 1977 b. Three new spiders of the genus *Coelotes* (Araneae: Agelenidae) from Minoo, Osaka, Japan. *Acta arachnol.*, 27 (spec. no.): 33–44. (In Japanese, with English descriptions.)
- OHNO, M., & T. YAGINUMA, 1972. Materials for the distribution of Araneae in Japan (II). *J. Toyo Univ., Gen. Educ. (Nat. Sci.)*, (14): 51–64. (In Japanese.)
- OHNO, M., & T. YAGINUMA, 1973. Ditto (III). *Ibid.*, (16): 33–55. (In Japanese.)
- OKITSU, S., 1951. Collecting records of spiders from Yamagata Prefecture. *Bull. Biological Club of Tsuruoka High School, Yamagata*, (1): 26–30. (In Japanese.)
- SAITO, S., 1939. On the spider from Tōhoku (northernmost part of the main island), Japan. *Saito ho-on kai Mus. Res. Bull.*, (18): 1–91.

- UCHIDA, Z., 1976. Spiders of Mts. Kakuda-yama, Niigata Prefecture. *Kakuda-yama no Shizen*, pp. 321–329. Niigata, Board of Education of Maki-machi and Katahigashi-mura. (In Japanese.)
- YAGINUMA, T., 1958. Spiders from Shimokita Peninsula, Aomori Prefecture, Japan. *Misc. Rept. Res. Inst. nat. Resources*, (46–47): 69–77. (In Japanese, with English descriptions.)
- YAGINUMA, T., 1967. Revision and new addition to fauna of Japanese spiders, with descriptions of seven new species. *Lit. Dept. Rev. Otomon Gakuin Univ.*, (1): 87–107. (In Japanese, with English descriptions.)
- YAGINUMA, T., 1972. The fauna of the lava caves around Mt. Fuji-san. IX. Araneae (Arachnida). *Bull. Natn. Sci. Mus., Tokyo*, 15: 267–334.
- YAGINUMA, T., 1981. A list of spiders from Niigata Prefecture. *Heteropoda*, (4): 1–7. (In Japanese.)